The State of New Hampshire

Department of Environmental Services

Michael P. Nolin
Commissioner

Town of Wolfeboro
Department of Sewer and Water
Attn: Mr. Scott Lees
P.O. Box 629
Wolfeboro, NH 03894-0629

Re: Wolfeboro Wastewater Treatment Facility, Filter Bed Road, DES Master ID #5886 / Permit No. GWP-198705015-W-001

ADMINISTRATIVE ORDER
NO. WD 05-014

April 19, 2005

A. INTRODUCTION

This Administrative Order is issued by the Department of Environmental Services, Water Division to the Town of Wolfeboro pursuant to RSA 485-A. This Administrative Order is effective upon issuance.

B. PARTIES

1. The Department of Environmental Services, Water Division ("DES"), is a duly constituted administrative agency of the State of New Hampshire, having its principal office at 29 Hazen Drive, Concord, NH 03301.

2. The Town of Wolfeboro ("Town") is a duly-constituted municipality of the State of New Hampshire, the town offices having a mailing address of P.O. Box 629, Wolfeboro, NH 03894-0629.

C. STATEMENTS OF FACTS AND LAW

1. The Town is the owner, operator, and property owner of the Wolfeboro Wastewater Treatment Facility located on Filter Bed Road in Wolfeboro.

2. RSA 485-A:13 authorizes DES to regulate the discharge and disposal of wastewater to groundwater.

3. Pursuant to RSA 485-A:13 and RSA 485-A:6, VII, the Commissioner has adopted New Hampshire Administrative Rules Env-Ws 1500 - Groundwater Discharge Permit and Registration, to implement this program.

4. Pursuant to RSA 485-A:13, DES regulates surface water quality standards.

5. Pursuant to RSA 485-A:13 and 485-A:6, VII, the Commissioner has adopted New Hampshire Administrative Rule Env-Ws 1700 – Surface Water Quality Regulations to regulate water quality standards.

6. Pursuant to Env-Ws 1504.03(e), no groundwater discharge shall cause degradation which results in a violation of surface water quality standards.

7. Pursuant to Env-Ws 1503.01(c), groundwater shall not contain any contaminant at a concentration such that the natural discharge of that groundwater to surface water will cause a violation of a surface water quality standard.

8. Pursuant to Env-Ws 1703.14(c), existing surface water discharges containing either phosphorous or nitrogen which encourage cultural eutrophication shall be treated to remove phosphorous or nitrogen to ensure attainment and maintenance of water quality standards.

9. Pursuant to Env-Ws 1703.14(d), there shall be no new or increased discharge of phosphorous into lakes or ponds.

10. Pursuant to Env-Ws 1707.14(e), there shall be no new or increased discharges containing phosphorous or nitrogen to tributaries of lakes or ponds that would contribute to cultural eutrophication or growth of weeds or algae in such lakes and ponds.

11. Pursuant to RSA 485-A:13, it is unlawful to discharge waste to surface water without demonstrating compliance with the Federal Water Pollution Act (also referred to as the Clean Water Act).

12. Pursuant to the Federal Water Pollution Act, no entity shall discharge pollutants to waters of the United States without a National Pollutant Discharge Elimination System (NPDES) permit unless such a discharge is otherwise authorized by the act.

13. Pursuant to RSA 485-A:2, XIV, ""Surface waters of the state" means perennial and seasonal streams, lakes, ponds, and tidal waters within the jurisdiction of the state, including all streams, lakes, or ponds bordering on the state, marshes, water courses, and other bodies of water, natural or artificial."

14. Pursuant to 40 CFR 122.2, Waters of the United States include:

> [..](c) All other waters such as intra-state lakes, rivers, streams (including intermittent streams), mudflats, sandflats, "wetlands," sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
>
> (1) Which are or could be used by interstate or foreign travelers for recreational or other purposes;
>
> (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
>
> (3) Which are used or could be used for industrial purposes by industries in interstate commerce;
>
> (d) All impoundments of waters otherwise defined as waters of the United States under this definition;
>
> [..](g) "Wetlands" adjacent to water (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

15. The Town operates a wastewater treatment facility (WWTF) that includes a treatment plant, a 93 million gallon wastewater storage impoundment, and slow rate spray irrigation effluent disposal system.

16. The wastewater treatment plant is designed to treat a maximum of 600, 000 gallons per day of sewerage. The sewerage process capacity is restricted to the storage limits of the wastewater impoundment.

17. The wastewater from the treatment plant is collected between November and April of each year when wastewater cannot be applied to the ground surface. The Town stores this wastewater from the treatment plant in a 93 million gallon wastewater impoundment when it cannot dispose of effluent using the slow rate disposal method. The entire storage capacity of the impoundment must be available for storage by November of each year.

18. The 93 million gallon storage impoundment pond and spray irrigation areas are subject to Env-Ws 1500 and continue to operate under the conditions specified in Groundwater Discharge Permit No. GWP-198705015-W-001.

19. Pursuant to Env-Ws 1500, the 93 million gallon storage impoundment pond and spray irrigation areas operated under the conditions specified in Groundwater Discharge Permit No. GWP-198705015-W-001 ("the Permit"), which was issued on February 14, 2000 for a term of 5 years.

20. Pursuant to Condition 4 of the Groundwater Discharge Permit, the Town is required to operate the impoundment pond and spray irrigation areas under the conditions specified in the expired Permit until such time as its Application for Permit Renewal, submitted on January 24, 2005, is approved.

21. The slow-rate disposal system operated by the Town applies treated wastewater stored in the 93 million gallon storage pond as spray irrigation to five designated spray areas northwest of the wastewater treatment facility. The storage pond and spray areas are in a designated groundwater discharge zone in accordance with Env-Ws 1504.02.

22. A slow-rate effluent disposal system functions by applying wastewater at a slow rate onto moderately permeable cultivated or forested land. The wastewater is then consumed through evapotranspiration and percolation in the subsurface and discharged to the groundwater.

23. The limit to the loading rate of each of the five spray irrigation areas used by the Town over the last twenty-seven years has been 2-inches per week. This means that up to two inches of wastewater could be applied in each spray area each week, unless natural precipitation occurred. Spray irrigation application rates have to be reduced by the amount of precipitation that the site receives.

24. Condition 16 of the Groundwater Discharge Permit No. GWP-198705015-W-001 states that the spray irrigation discharge shall not exceed 2 inches per week including precipitation.

25. The slow rate effluent disposal method can only occur during the vegetative growing seasons when: 1) Deciduous trees have leaves; 2) Surface soils in the spray area are not saturated; and 3) The ground is not frozen. This means that the wastewater cannot not be discharged in the spray areas operated by the Town between the months of November through April because the application of wastewater to the land surface during this time period would result in run-off and a discharge to surface water bodies.

26. Condition 19 of the Groundwater Discharge Permit No. GWP-198705015-W -001 states that no spray application shall be allowed during rainfall or after leaf fall and that spray shall be allowed from May 1 thru October 31 unless otherwise approved by the DES.

27. When using the slow rate spray irrigation effluent disposal method, if wastewater is applied at a rate that exceeds the rate of infiltration and evapotranspiration when combined with natural precipitation, some wastewater is not percolated or evaporated. Instead, a portion of the wastewater flows over the land in the topographic downgradient direction and ultimately is intercepted by natural surface water drainage systems.

28. Run-off from the five irrigation spray areas utilized by the Town drains into streams that discharge to Mirror Lake, which is approximately 1.5 miles away.

29. Condition 21 of Groundwater Discharge Permit No. GWP-198705015-W-001 states that the spray irrigation shall not result in a direct discharge to a surface water body.

30. In November 1991, the Town had to extend discharges through the month of November due to storm damage that occurred in the spray irrigation areas.

31. During a site-walk on December 2, 1993, it was noted by DES staff that wet areas and streams within the spray areas occur due to spraying.

32. On April 22, 1996, the Town began discharging wastewater as the wastewater storage pond was about to overflow.

33. On April 24, 1996, the Town's consultant wrote in a memo to the file that was copied to the Department, "..the Town recognizes that it is in violation of the Groundwater Discharge Permit criteria for no observable run-off from the site, and maintenance of depths to groundwater of greater than one foot. However, site and soil conditions make these criteria unattainable". This analysis is based on a wastewater loading rate of 2 inches per week.

34. In 1998, the Town had to increase discharges by an additional 1.5 million gallons a week in order to empty the storage pond prior to the winter season.

35. In a letter to DES dated February 5, 1999, the Town's consultant described numerous improvements that had been made to the spray irrigation areas. The consultant also described tests that show that 16%-17% of the wastewater applied at the facility discharged off-site into streams. The same test also demonstrated that nutrients in nearby surface water bodies increase when spray effluent is being applied.

36. In November 2000, the Town sprayed effluent continuously, even during periods of rain so that the storage pond would be sufficiently emptied prior to winter.

37. In an intra-town memo dated December 17, 2002, it was stated that the permitted application rate of spray irrigation of two inches a week was "unmanageable" and "unworkable", and that the disposal rate needs to be 4.16 inches per week. The memo also stated that the Town violated the permitted discharge volume allowed by the groundwater discharge permit for the site 22% of the time.

38. In a letter dated November 19, 2003, the Town stated that it had to continue to discharge wastewater effluent in the spray areas in order to empty the wastewater storage pond to create sufficient storage for the winter months.

39. In a letter dated September 12, 2003, DES stated that the Town had clearly reached its capacity to dispose of wastewater. DES directed the Town to obtain additional areas to dispose of water or develop alternative methods to dispose of wastewater.

40. In a letter dated October 24, 2003, DES again stated that the Town had clearly reached its capacity to dispose of wastewater. DES again directed the Town to obtain additional areas to dispose of water or develop alternative methods to dispose of wastewater.

41. In a letter dated November 19, 2003, the Town again requested its third extension in the 2003 discharge period.

42. In a letter dated March 3, 2004, DES stated that the Town was required to develop a long range site management plan to identify and ultimately employ additional areas of disposal or alternative methods of disposal to alleviate the pressure and over spraying of existing fields.

43. In 2004, the Town had to increase the loading rate of spray irrigation from 2 inches per week to 4 inches a week in order to drain the storage pond for the upcoming winter season.

44. In a letter dated May 29, 2004, DES stated that the Town needed to develop additional spray areas or alternative disposal methods.

45. In a letter dated September 2, 2004, DES stated to the Town that it was crucial that additional areas or methods be found to meet the current and future wastewater needs of the town.

46. During a site visit on September 17, 2004, DES staff observed overland flow discharging from the spray areas into nearby surface waters.

47. On October 29, 2004, DES completed an inspection of the wastewater storage pond and spray irrigation areas and observed that wastewater from spray irrigation areas 2, 3, 4 and 5 was flowing overland and into "surface waters of the state" and "waters of the United States".

48. In a letter dated November 5, 2004, DES notified the Town that overland flow from the spray irrigation areas flowed into surface waters and that this was a violation of state and federal law.

49. Water quality samples obtained from the wastewater storage pond in 2004 demonstrate that water sprayed onto the land surface, a portion which flows overland into surface water bodies, contains nutrients as shown below:

Date	Location	Total Phosphorous (mg/l)	Ammonia (mg/l)	Nitrate (mg/l)
04/20/04	Effluent Pond	1.3	2.1	Not Sampled
05/27/04	Effluent Pond	1.9	4.5	7.0
06/24/04	Effluent Pond	1.6	1.9	12.3
07/22/04	Effluent Pond	1.5	2.9	11.4
08/19/04	Effluent Pond	2.8	2.9	11.0
09/23/04	Effluent Pond	2.1	4.5	17.2
10/21/04	Effluent Pond	1.3	2.4	4.0

Water quality samples obtained from the effluent pond in previous years exhibit similar characteristics.

50. The water quality of run-off emanating from the spray areas to surface water bodies contain elevated concentrations of phosphorous and nitrate that results in increased loading of phosphorous and nitrogen in the receiving surface water bodies as demonstrated by the following water quality data obtained from water samples collected by DES in 2004.

Date	Sample ID/Location	Total Phosphorous (mg/l)	Nitrate (mg/l)

10/29/04	Sample 3 – Run-off Outside Spray Area 5	0.225	2.17
10/29/04	Sample 4 – Run-Off down gradient of Spray Area 5	0.282	2.43
10/29/04	Sample 5 – Run-off between Spray Area #3 and #4	0.138	1.86
10/29/04	Sample 7 –Run-off downgradient of Spray area 3	0.07	0.74
10/29/04	Sample 8 – Run-off adjacent to Spray Area 2	0.172	0.81
10/29/04	Sample 9 – Down gradient of Sample 3 and Spray Area 5	0.139	1.63

51. The Town continues to operate under the conditions of the expired Groundwater Discharge Permit No. GWP-198705015-W-001. On January 24, 2005 the Town filed a new Groundwater Discharge Permit Application with the DES.

52. The Town continues to allow new service connections to hook-up to its wastewater sewer system. The sewer system is connected to the WWTF which discharges to the storage pond and irrigation spray areas. Adding new users to the sewer system results in additional wastewater flows thus increasing discharges to the spray areas and run-off from those areas into surface water bodies that are tributaries to Mirror Lake.

53. The Town does not employ treatment methods to remove nitrogen or phosphorous from the wastewater effluent that is applied to the spray areas.

D. DETERMINATION OF VIOLATIONS

1. The Town has routinely violated RSA 485-A:13 by discharging wastewater to surface waters of the state and United States without obtaining a NPDES permit. Due to the physical characteristics of the site, and volume of water processed at the WWTF, such violations will continue to occur periodically until additional wastewater disposal capacity and/or methods are developed and implemented.

2. The Town has violated Env 1703.14(c) by discharging wastewater that contains concentrations of phosphorous and nitrogen that encourage cultural eutrophication in surface water bodies. The Town does not employ treatment to remove nitrogen or phosphorus.

3. The Town has violated Env-Ws 1703.14(d) and (e) by increasing the amount of phosphorous and nitrogen that is discharged to Mirror Lake.

4. The Town has violated the groundwater discharge permit compliance criteria pursuant to Env-Ws 1504.03 by violating surface water quality standards pursuant to Env-Ws 1700.

5. As the owner, operator and property owner of the Wolfeboro Wastewater Treatment Facility, and pursuant to RSA 485-A:22, the Town is responsible for the violations noted herein.

E. ORDER

Based on the above findings, DES hereby orders the Town as follows:

1. **Effective immediately**, the Town shall not allow or accept any user expansion, changes, or additions to connect to its municipal sewer collection system that will increase the volume of wastewater flow to the wastewater treatment facility. This restriction shall commence immediately and remain in force until the Town's WWTF has sufficient capacity to process additional wastewater flows without violating State and Federal laws and regulations

2. **By July 1, 2005** submit an updated site map identifying the existing facility surface water areas, storage pond bathymetry, drainage ways, wetland soils, spray irrigation areas, site improvements, roads and surface topography.

3. **By December 31, 2005**, provide to DES in writing a wastewater treatment and disposal management plan that explains the Town's approach to work for mitigating existing environmental violations stated above by May 1, 2007. The wastewater management plan must also include an assessment of the future capacity requirements for the WWTF.

4. **By May 1, 2007**, fully implement all facility improvements necessary to bring the facility into compliance with the requirements of RSA 485-A, Env-Ws 1700, and the federal Water Pollution Act.

5. **By May 1, 2007,** provide a scope of work and associated schedule for implementing facility improvements to meet the future capacity requirements of the WWTF.

6. Send correspondence, data, reports, and other submissions made in connection with this Administrative Order, **other than appeals**, to DES at follows:

Mitchell D. Locker,
Permits Coordinator/ Water Supply Engineering Bureau
DES Water Division
P.O. Box 95
Concord, NH 03302-0095
Phone : (603) 271-2858
Fax: (603) 271-0656
e-mail: *mlocker@des.state.nh.us*

F. APPEAL

Any person aggrieved by this Order may appeal the Order to the Water Council by filing an appeal that meets the requirements specified in Env-WC 200 within 30 days of the date of this Order. Copies of the rule are available from DES's Public Information Center at (603) 271-2975 or at *http://www.des.state.nh.us/desadmin.htm*. Appealing the Order does not automatically the Town of Wolfeboro of the obligation to comply with the Order.

G. OTHER PROVISIONS

Please note that RSA 485-A:43 provides for administrative fines, civil penalties, and criminal penalties for the violations noted in this Order, as well as for failing to comply with the Order itself. The Town of Wolfeboro remains obligated to comply with all specified requirements contained in Groundwater Discharge Permit No. GWP-198705015-W-001.

COPY

Harry T. Stewart, Director
Water Division

COPY

Michael P. Nolin, Commissioner
Department of Environmental Services

Certified Mail/RRR: 7000 0600 0023 9932 7457

cc: Gretchen R. Hamel, Legal Unit Administrator
Public Information Officer, DES PIP Office
Jennifer J. Patterson, Sr. Asst. Attorney General, NHDOJ/EPB
Sarah Pillsbury, Administrator, WSEB
Brandon Kernen, Supervisor, DWSPP
Wolfeboro Selectmen
Dave Dedian, Woodard & Curan, Inc.